

REMARKS

Request for Reconsideration

Applicants have carefully considered the matters raised by the Examiner in the outstanding Office Action but remain of the opinion that patentable subject matter is present. Applicants respectfully request reconsideration of the Examiner's position based on the attached Declaration of Mr. Kazama and the following comments.

Claims Status

Claims 15-27 are pending in this Application. No amendments have been made at this time.

Prior Art Rejection

Claims 15-21, 26 and 27 had been rejected as being unpatentable over Michihata, and Claims 22-25 had been rejected as being unpatentable over a combination of Michihata, Knoop and Roerty.

Summary of Applicants' Arguments

This Application contains three independent process claims, Claims 15, 17 and 22. Claim 15 requires a residual solvent content of not more than 0.05% by weight. Claim 17

requires that the peeled web be subject to a tension of 10 to 80 N/m before winding on a spool. Claim 22 requires that after the initial heating step in a sealed vessel, that the vessel be unsealed and the dope be allowed to stand for a period of time and then resealed the vessel and reheated the dope to the boiling point.

It is Applicants' position that:

(1) the solvent limitation of Claim 15 provides surprising and unexpected results which are presented by way of the attached Declaration; and Michihata teaches away from the solvent limitation;

(2) the primary reference of Michihata teaches away from the claimed tension limitation of Claim 17 and the attached Declaration demonstrates the criticality and unexpected results obtained from the specific tension limitation; and

(3) the combined references do not teach or suggest the combination of unsealing, resealing and further heating as recited in Claim 22.

Applicants' position is presented in more detail below.

Claims 15, 16, 26 and 27

As noted above, Claim 15 requires that the residual solvent be no more than 0.05% by weight. Claims 16, 26 and 27 are dependent upon Claim 15.

The Examiner had taken the position that Michihata teaches a residual solvent of 2 wt. % or less, see Paragraph 10 of Michihata, and it would be obvious to one of skill in the art to use the ranges as recited in the claims because of the overlap. Applicants disagree on two counts.

First, it is submitted that Michihata teaches away from the solvent limitation of Claim 15 because his initial range and his example are far above the claimed range, albeit there is overlap. It is noted that on the face the upper level of Michihata starts at 2 wt. %, whereas, the present Invention has an upper limit of 0.05 wt. %. On the face, these two values are different by a factor of forty (40). From a scientific standpoint, changing one value for another value in a magnitude of 40 is not normal, routine variations. A forty (40) fold difference is a far cry from what one of skill in the art would normally do when following the teachings of a Prior Art reference. In other

words, one of skill in the art would not change Michihata's upper limit by a factor of forty (40) and expect to get the same results. Albeit, that there is overlap, that overlap does not direct one of skill in the art to change a limitation by a factor of forty (40), and such teaches away from the present Invention.

Furthermore, it is submitted that Michihata teaches away from the claimed residual solvent range because in the Examples (Paragraph 84) of Michihata, he teaches that the residual solvent is 0.2%. Thus, in Michihata's Examples, his residual solvent is on the order of 4 times greater than the claimed range. Respectfully, given the specific teachings in Michihata of a forty (40) fold difference and the fact that his specific examples are 4 times greater than the present Invention, Michihata is teaching away from the specific claimed residual solvent as recited in Claim 15.

Second, Applicants also submit that they have obtained unexpected results by making their cellulose ester film with a residual solvent content of 0.05% by weight or less. In order to demonstrate these unexpected results, tests have been carried out with different amounts of residual

solvent in the cellulose ester film at the winding step. Those results are shown in Table 1 of the attached Declaration of Mr. Kazama.

The Examiner's attention is directed to page 3 of Mr. Kazama's Declaration wherein different tested samples are reported. It can be seen that Mr. Kazama tested 2%, 1% and 0.08% of residual solvent. All three of these values, which have been labeled C-1, C-2 and C-3, have also been tested for elongation percentage. Mr. Kazama also tested two samples within the claimed range and these have been labeled 2 and 4.

As is apparent from Table 1, Samples 2 and 4, that fall within the claimed range greatly minimize the elongation percentage as compared to Samples C-1, C-2 and C-3. Particularly, the Examiner will note that Sample 2 exhibits an elongation on the order of 25 times the elongation value of C-2 and C-3. This shows that the inventive cellulose ester film samples greatly minimize the deformation and greatly improve the film quality. It will be noted that on page 4, lines 3-7 of Mr. Kazama's Declaration, that he attests to the fact that these were unexpected results to one of skill in the art.

Furthermore, the Examiner should appreciate the fact that a 25 fold decrease in the elongation percentage is not something that one would expect by reading Michihata.

Applicants submit that Claims 15, 16, 26 and 27 are patentable over the teachings of Michihata because, given the large difference in the limits of the residual solvent between the present Invention and Michihata, i.e. 2 wt. % and 0.2 wt. % versus 0.05 wt. %; and given the difference in percent elongation between cellulose ester films having the residual solvent within Michihata versus within the present Invention, Sample 2 having a 0.02 wt. % elongation versus Sample C-3 having a 1.13 percent elongation, it is respectfully submitted that one of skill in the art would not modify Michihata to arrive at the present Invention.

Claims 17-20

As noted above, Claim 17 recites that the peeled web of cellulose ester film has been subjected to a tension of 10 to 80 N/m prior to winding of the spool. Claims 18-20 are dependent upon Claim 17.

The Examiner took the position that Michihata suggests the Applicants' range for tension because in Paragraph 10 of Michihata he teaches winding at a peeling tension of not more than 250 N/m.

First, albeit that there is overlap between the claimed range and the range taught in Michihata, that overlap is very large. The upper limit of Michihata, 250 N/m, is on the order of three times greater than the upper limit of the claimed range of 80 N/m. Furthermore, Michihata teaches that the peeling tension is more preferably 200 N/m and in Paragraph 84 of Michihata, he teaches a specific example where the peeling tension is 150 N/m. Thus, on its face, Michihata is teaching a peel tension which is on the order of 2 to 3 times greater than the upper limit of the present Invention and on the order of 15 to 25 greater than the lower limit of the claimed range. Respectfully, Michihata teaches away from the claimed range given the fact that his example in Paragraph 84 teaches a peel temperature of 150 N/m.

Second, Applicants' direct the Examiner's attention to the Declaration of Mr. Kazama which presents evidence to demonstrate the criticality and the unexpected nature obtained by using the claimed tension. Specifically, the Examiner's attention is directed to Table II on page 5 of Mr. Kazama's Declaration. In Table 2, the Examiner will note that Samples 8, 9 and 10 all fall within the claimed range while Samples 22 and 23 fall on either side of the claimed range. The values for elongation percentage, A, B, and F, are recited on the paragraph bridging pages 42 and 43 of the Application. An elongation percentage of A means that there was 0 % elongation. An elongation percentage of B means that there was 0.1 to 0.5 % elongation. An elongation percentage of F means that the elongation percentage was not less than 6.1 %.

With respect to the scratch ratings, the specific scratch ratings are defined in the paragraph bridging pages 41 and 42 of the Application. A scratch rating of A indicates no scratches. A scratch rating of B indicates small scratches, less than 0.5 mm. A scratch rating of D indicates regular occurring scratches with lengths of about 0.5 mm.

Thus, it can be seen that Samples 8, 9 and 10, that fall within the claimed range, have a greatly decreased elongation percentage and a minimum number of scratches compared to Samples 22 and 23. Sample 22 has a lot of scratches because the Transport Tension was too low. Sample 23, which had a larger tension than the claimed range, had increased elongation because of the too high Transport Tension. Respectfully, the data in Table 2 of Mr. Kazama's Declaration demonstrates the criticality of the claimed range for tension of 10 to 80 N/m.

Furthermore, it is submitted that the data in Table II of Mr. Kazama's Declaration also demonstrate the unexpected nature of the claimed range. It is submitted that one of skill in the art would not predict the superior elongation percentage and superior scratch resistance that is available from the specific claimed tension range. The Examiner's attention is directed to the second to last paragraph on page 5 of Mr. Kazama's Declaration where he attests to the fact that the results obtained from this tension are unexpected to one of ordinary skill in the art based on the reading of Michihata.

In conclusion, it is submitted that Claims 17-21 are patentable over Michihata because Michihata teaches away from the specific tension recited in the claims and based on the Declaration data which demonstrates, not only the criticality, but the unexpected nature of the tension recited in the claims.

Claims 22-25

As noted above, Claim 22 recites that during the making of the cellulose ester dope, the vessel is unsealed after the initial cooking step, allowed to stand for a period of time, and then resealed and reheated to the temperature between the boiling point and the 50° above the boiling point of the organic solvent. Claims 23-25 are dependent upon Claim 22.

The Examiner recognized that Michihata did not teach the steps of unsealing the vessel and allowing it to stand for a period of time, resealing the vessel and further heating the vessel to a temperature between the boiling point and 50° above the boiling point of the organic solvent. In order to teach the unsealing of the vessel, the Examiner turned to Knoop. For the second heating step, the Examiner turned to Roerty.

Applicants submit that even if one were to combine all three references, one would not arrive at the present Invention.

First, turning to Roerty, Roerty does not teach resealing the vessel after a degassing step and then further heating the mixture to above the boiling point of the solvent as claimed. Roerty only teaches that a gas phase is more readily dissolved in a liquid phase when under pressure. The reheating step as recited in the claim is not carried out to dissolve any remaining gases since the mixture has already been degassed in the unsealing step. Furthermore, the Examiner states on page 6, lines 14-16 of the outstanding Office Action, "it would have been obvious to one of ordinary skill that a second heating to above the boiling point in a sealed environment would create the pressure necessary to dissolve any remaining entrained gas,...". The Examiner should note that if the second heating step in the sealed environment was carried out to dissolve any of the renaming entrained gases, undesirable air bubbles would be produced in the cellulose ester film at atmospheric pressure under which the cellulose ester film is manufactured. This is specifically against the objects of the present Invention, see page 5,

line 2 on the bottom to page 6, line 2, of the Specification. Thus, the teaching in Roerty would not be used by one of skill in the art when dealing with the cellulose ester film of the present Invention because one of skill in the art would not want any gases in the dope. In fact, putting gases in the dope contradicts the degassing step.

Turning to Knoop, it will be noted that at Column 7, lines 34-36, that after the degassing step, Knoop teaches pumping the mixture to a holding tank. Respectfully, pumping the mixture to a holding tank teaches away from a second heating step.

Given the fact that Knoop and Roerty teach away from the present Invention, it is submitted that one of skill in the art would not combine the two references to arrive at the present Invention.

Accordingly, it would not be obvious to one of ordinary skill in the art to arrive at the subject matter of Claim 22 by combining Michihata, Knoop and Roerty since such a combination does not teach the specific order of steps as recited in the claims, namely, resealing the

vessel after the degassing step and then further heating the mixture to above the boiling point of the solvent.

In view of the foregoing, it is respectfully submitted that Claims 21-25 are patentable over either of the cited references taken alone or in combination.

Conclusion

In view of the foregoing and the enclosed, it is respectfully submitted that the Application is in condition for allowance and such action is respectfully requested.

Should any fees or extensions of time or fees be necessary in order to maintain this application in pending condition, appropriate requests are hereby made and authorization is given to debit account #02-2275.

Respectfully submitted,  
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Attached: Executed Declaration of Mr. Kazama signed  
on August 10, 2007.